N. A. C. A. BULLETIN

Vol. XXIII, No. 6 November 15, 1941

IN TWO SECTIONS

Section I

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This Bulletin is published semi-monthly by the National Association of Cost Accountants, 385 Madison Avenue, New York. Subscription price, $10.00 per year. Entered at the Post Office, New York, N. Y., as second-class matter August 28, 1925, under the Act of March 3, 1879.

EDITORIAL DEPARTMENT NOTE

In conformance with the publication policy of N.A.C.A. of providing through the *Bulletin* as wide a coverage as possible of the accounting methods in various industries and fields of activity, we are presenting in this issue an interesting and informative article on "Accounting For Air Transportation." Air transport companies have their own accounting problems in spite of, and also as a result of, regulations and prescribed uniform accounting methods. This article will be of interest not only to those whose work brings them in contact with air transport companies but to everyone who is interested in the application of accounting problems to varied situations.

The author of this article, M. W. McQueen, was born in Berkeley, Calif., but later moved to Kansas City, Mo. He attended the Westport High School in Kansas City, and later the University of Missouri, and after graduation entered the banking business. During the period from 1921 to 1926, he acted as Assistant Cashier and Cashier of various banks located in the State of Kansas. During the years 1926 to 1928, Mr. McQueen was Assistant National Bank Examiner in the Tenth Federal Reserve District with headquarters at Kansas City. He resigned as Bank Examiner to again enter the banking business, where he remained until 1930 when he became associated with Transcontinental & Western Air, Inc. Mr. McQueen has held various positions with TWA. In 1939 he was made Auditor of the Company, in which capacity he is serving at the present time.

Articles published in the *Bulletin* present many different viewpoints. In publishing them the Association is not sponsoring the views expressed, but is endeavoring to provide for its members material which will be helpful and stimulating. Constructive comments are welcomed and will be published in the Forum Section of the *Bulletin*.

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NOVEMBER 15, 1941

ACCOUNTING FOR AIR TRANSPORTATION

By M. W. McQueen, Auditor,
Transcontinental & Western Air, Inc., Kansas City, Mo.

REGULARLY scheduled air transportation had its start on May 15, 1918, with the inauguration of air mail service from Washington, D. C. to New York City with army fliers carrying mail. In 1926 contracts for the carriage of air mail were let to private passenger-carrying airlines.

The history of the air transportation industry has been one of expansion. For the fiscal year ended June 30, 1940, a total of 95,100,628[1] revenue plane miles were flown by the domestic airlines. This figure may be somewhat more easily visualized if it is stated that this mileage is the equivalent of one airplane continuously encircling the globe at the equator once each two hours and eighteen minutes throughout the year. During the same year, the domestic airlines carried 2,225,319[1] revenue passengers for a total of 855,947,378[1] seat miles, and transported 18,675,595,509[1] pound miles of mail and 5,986,476,988[1] pound miles of express.

An idea of the increasing importance of the domestic airlines in our national transportation picture may be obtained from the following comparison of revenue passenger miles flown by all airlines as contrasted with the revenue passenger miles operated by the Pullman Company:

Revenue Passenger Miles[2]	*1940*	*1939*
Pullman Company	8,213,878,992	8,485,399,122
All Airlines	1,041,173,558	677,672,955
% Airlines to Pullman	12.68%	7.99%

Federal Regulation

A series of Federal laws have been enacted providing for the carriage of air mail by domestic airlines, and further providing for the regulation of the airlines. This legislation started with the Air Mail Act of 1925 and culminated in the Civil Aeronautics Act of 1938, which was entitled "an Act to create a Civil Aeronautics Authority and to promote the development and safety and

[1] Second Annual Report of the Civil Aeronautics Authority 1940, page 39, Appendix H.
[2] Pullman Company Annual Report 1940 and CAA Air Carrier Statistics.

to provide for the regulation of civil aeronautics." Under the Act, the Civil Aeronautics Authority was given control of domestic airlines and all other civil aviation. This control had previously been shared by the United States Post Office Department, the Interstate Commerce Commission and the Bureau of Air Commerce of the Department of Commerce. The Act creating the Civil Aeronautics Authority provided in part for:

1. The issuance of a certificate of public conveyance and necessity as a prerequisite to the operation of an air transportation system.
2. The filing of tariffs and the issuance of rules with regard to the compliance with the tariffs.
3. General control of the transportation of air mail.
4. A uniform system of accounts, records and reports.
5. The establishment of safety regulations providing:
   (a) Minimum standards, rules and regulations.
   (b) Authority to license pilots through the issuance of airman's certificates.
   (c) Authority to license aircraft.
   (d) Authority to license air carriers through the issuance of operating certificates.
   (e) Authority for the inspection of the maintenance of equipment used in air transportation.

Unusual Importance of Statistical Functions in Air Transportation

A very important function performed by the statistical staff of the airlines results from certain provisions of the Civil Aeronautics Act of 1938. Those provisions are:

> "Sec. 2. In the exercise and performance of its powers and duties under this Act, the Authority shall consider the following, among other things, as being in the public interest, and in accordance with the public convenience and necessity—
>
> "(a) The encouragement and development of an air-transportation system properly adapted to the present and future needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the national defense;

"(b) The regulation of air transportation in such manner as to recognize and preserve the inherent advantages of, assure the highest degree of safety in, and foster sound economic conditions in, such transportation, and to improve the relations between, and coordinate transportation by, air carriers;

"(c) The promotion of adequate, economical and efficient service by air carriers at reasonable charges, without unjust discriminations, undue preferences or advantages, or unfair or destructive competitive practices;

"(d) Competition to the extent necessary to assure the sound development of an air-transportation system properly adapted to the needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the national defense;

"(e) The regulation of air commerce in such manner as to best promote its development and safety; and

"(f) The encouragement and development of civil areonautics."

The Act further provides under Section 406(b):

"In fixing and determining fair and reasonable rates of compensation under this section, the Authority, considering the conditions peculiar to transportation by aircraft and to the particular air carrier or class of air carriers, may fix different rates for different air carriers or classes of air carriers, and different classes of service. In determining the rate in each case, the Authority shall take into consideration, among other factors, the condition that such air carriers may hold and operate under certificates authorizing the carriage of mail only by providing necessary and adequate facilities and service for the transportation of mail; such standards respecting the character and quality of service to be rendered by air carriers as may be prescribed by or pursuant to law; and the need of each such air carrier for compensation for the transportation of mail sufficient to insure the performance of such service, and, together with all other revenue of the air carrier, to enable such air carrier under honest, economical, and efficient management, to maintain and continue the develop-

ment of air transportation to the extent and of the character and quality required for the commerce of the United States, the Postal Service, and the national defense."

Under provisions of the Act, whenever an air carrier seeks additional mail compensation or additional routes, a public hearing is held at which the air carrier presents statistical and factual evidence in support of its position. The importance of these hearings and the necessity for complete and accurate statistical presentation cannot be over emphasized.

Uniform System of Accounts, Records and Reports

The Civil Aeronautics Board has continued in force the Uniform System of Accounts originally prescribed for domestic air mail carriers by the United States Post Office Department. The various accounts are grouped in this chart under the following headings:

1. Balance Sheet Accounts
   - A. Current and Accrued Assets
   - B. Investments
   - C. Deferred Debits
   - D. Special Funds
   - E. Fixed Assets
   - F. Capital Stock Discount and Expense
   - G. Current and Accrued Liabilities
   - H. Long-Term Debt
   - I. Deferred Credits
   - J. Reserves
   - K. Capital Stock
   - L. Surplus
2. Income Statement Accounts
   - A. Operating Revenue
   - B. Non-Operating Income
   - C. Deductions from Gross Income
3. Operating Revenue Accounts
   - A. Transportation
   - B. Incidental Services
   - C. Miscellaneous Air Services, Sales and Rentals
4. Operating Expense Accounts
   - A. Direct Flying Expense
     - (a) Operations
     - (b) Maintenance
     - (c) Depreciation
   - B. Indirect Flying Expense
     - (a) Operations
     - (b) Maintenance
     - (c) Depreciation
   - C. Traffic and Advertising Expense
   - D. General and Administration Expense

It is necessary under the existing account classification to subdivide these accounts to record expenses and revenues by air mail routes, and also to subdivide direct flying expense by types of airplanes used on each route.

Many of the items in the classification of accounts are similar to those used in other industries and, consequently, need no discussion here. I believe that it will be worth while, however, to discuss certain accounts or the method of handling certain accounts which are more or less peculiar to the air transport industry, and which it is believed will be of interest to those outside this industry.

The Accounts and Records Committee of the Air Transport Association of America, in collaboration with the Civil Aeronautics Board, has been making a study for the past several months in an effort to produce a simplified and improved classification of accounts for the industry.

Current and Accrued Assets

Accounts receivable include amounts due from the United States Post Office Department for transporting air mail, amounts due from the United States Government for transportation of officials and employees, and amounts due from others including charges for transportation under the air travel plan.

Under the air travel plan, responsible individuals or companies may make a $425 deposit with a participating airline and agree to use transportation amounting to not less than $300 a year during the period that the contract is in force. The airline will then issue air travel plan cards to the responsible individuals or officers of the company, and their employees. The air travel plan cards authorize the issuance of a ticket to the cardholder upon request at the office of any airline participating in the plan, and tickets issued in this manner are charged to the signer of the air travel plan contract at normal one-way tariff rates, less a discount of 15 per cent. Tickets may not be purchased by cash payment under the plan.

Traffic balances receivable from other carriers represent (1) amounts due for tickets sold by other airlines for transportation over the reporting airline, and (2) amounts due for tickets issued by the reporting airline to be charged to an air travel plan account

held by another airline. At the end of each month, each airline invoices each of the other airlines for the amount of tickets presented for use which were issued by each of the other airlines, and receives payment for these tickets less deductions for commissions which were paid for the sale of tickets by other airlines to travel bureaus or other outside agencies. Airlines do not charge each other for commission on tickets sold in their own office. A separate invoice is prepared for the amount due from other airlines for all tickets issued against the air travel plan accounts held by the other airlines. The invoices for tickets used are supported by the coupons of the tickets which were presented for use, while the invoices for amounts due for tickets sold against air travel plan accounts are supported by a copy of the transportation receipt signed by the purchaser of the ticket at the time the ticket was delivered.

The establishment of a clearing house by the air transportation industry would be a definite advantage in handling the settlement of traffic balances receivable and traffic balances payable, in addition to handling the bookkeeping and collection of amounts due the airlines under the air travel plan.

Agents accounts receivable, as defined by the official classification of accounts, include the amounts due from the various offices of the airline for the sale of tickets, as well as the amounts due from travel bureaus and other outside agencies that sell tickets for the airline on a commission basis.

State gasoline tax refundable represents amount of state gasoline taxes paid on purchases of gasoline which are refundable in most states when the gasoline is used as aircraft fuel. The amount refundable is established in most instances when the gasoline is purchased and the proper charge made to this account. When the gasoline has been consumed as aircraft fuel, refund applications are filed on forms supplied by the various states and the tax is refunded.

Inventory Control

Inventories of gasoline, lubricating oils, and materials and supplies held on hand for use are carried under the heading of current and accrued assets. Gasoline and lubricating oil inventories are rigidly controlled and physical inventories are verified against inventory records daily at each station. Exhibit I shows the form

GASOLINE AND OIL REPORT

STATION Kansas City MONTH August 1940 REPORT NO. 1-9

REPORT OF GAS 90 OCTANE OIL KIND

James Smith
STATION MANAGER

	DATE	PLANE NUMBER	ARRIVING FLIGHT NUMBER	GASOLINE GALLONS OR QUARTS: ADDED TO 000 000.0	ADDED TO 000 000.1	ADDED TO 000 000.2	ADDED TO 000 000.3 BOWSER	MISC.	SALES	WATER OR METER VERIFICATIONS	CLOSING METER READINGS		TOTAL GASOLINE ISSUED FOR DAY	TOTAL RECEIPTS FOR DAY	SHOULD HAVE ON HAND	PHYSICAL INVENTORY	OVER	SHORT	MONTH. NO. GAS	MONTH. NO. OIL
	TOTALS FROM PREVIOUS PAGE										14567	18926			** 12345	** 12345				
1	1	376	1			395					14962		AR	Represents Physical	Inventory as the last				51	
2		253	3		239							19165		balance of gasoline	month's Receipts					
3		252	Spec.		80							19245		Columns 15 and 16	will agree on the				50	
4		356	5		290							19535		first day of the	following month.				50	
5		328	53	387								19922	1391		10954	10950		4	52	
6																				
7	2	Water Check								10	14972								32	
8		260	Spec.					100			15072								46	
9		357	6		250						15322				Short 40 gal. in				52	
10		370	6			400					15722				accounting				34	
11		401	8				500				16222								53	
12		Gas Truck						10			16232		1260		9694	9650		44	52	
13																				
14	3	Meter Test								25	16257			Tax Paid 10150					52	
15		360	1		185							20107							55	
16		370	2			250						20357							57	
17		321	53	250								20607							50	
18		NC-4567 (S.T. 14567)							50			20657							47	
19		328		(A) Drain								20697	695		19149	19094		55	51	
20				The drain of the gals. is subtracted from Taxes																
21											Balancing Form = Columns 11 + 12					1721 - 346			Only these totals must be carried forward to Report #2-9.	
22																				
23				* Represents Difference in first and last Meter Readings.																
24																				
	TOTALS			597	1044	1045	500	110	50	35	*1690	*1771	3346							

EXHIBIT 1.

used by Transcontinental & Western Air, Inc., to record issues and receipts of gasoline and lubricating oil and to control inventories of these items. A separate report is made for each grade of gasoline or lubricating oil and the report is a continuing record for each month.

Inventories of materials and supplies are of particular importance in this industry, since many of these items are of a special nature and may be obtained from only one or relatively few sources and immediate deliveries are frequently not obtainable. Consequently, very accurate control of these items is necessary in order that minimum quantities may always be on hand. Our company has subdivided the materials and supplies inventory account by the following classifications for the purpose of better enabling the management to control these items:

1. Airplane parts—Douglas—Interchangeable
2. Airplane parts—Douglas Skyliner
3. Airplane parts—Douglas Skysleeper
4. Airplane parts—Douglas Skyclub
5. Airplane parts—Stratoliner
6. Airplane parts—All other types
7. Engine parts—Wright—Interchangeable
8. Engine parts—Wright F-50
9. Engine parts—Wright G-102
10. Engine parts—Wright G-202
11. Engine parts—Wright G-105
12. Engine parts—All other types
13. Radio parts
14. Engine accessory parts
15. Airplane accessory parts
16. Airplane hardware and rubber goods
17. Commercial hardware
18. Raw materials
19. Commissary supplies
20. Shop made parts in process
21. Surplus materials

In addition to these control accounts, perpetual inventory cards (Exhibit 2), filed in standard card cabinets, are maintained for each item. A purchase record card (Exhibit 3) is inserted in the back of the card pocket preceding the inventory card for each item. When the quantity of any item reaches the established minimum quantity, the date and quantity on hand is entered on the purchase record card and this card is forwarded to the chief storekeeper, with a notation on the reverse side if any quantities of the item have not yet been received from a previous order. The chief storekeeper has a physical count made of the quantity of

NO. ARTICLE PERPETUAL MATERIAL INVENTORY RECORD MINIMUM

PERPETUAL MATERIAL INVENTORY RECORD

NO.	ARTICLE									MINIMUM	
SECTION	AISLE		BIN		CLASS		PRICE		NO. UNIT		
DATE	REF. NO.	REC'D	ISSUED	BALANCE	UNIT PRICE	DATE	REF. NO.	REC'D	ISSUED	BALANCE	UNIT PRICE
NO.	ARTICLE									MINIMUM	

Exhibit 2.

PURCHASE RECORD

PART NO.	ARTICLE								TWA PURCHASE RECORD P-707				
AISLE	SECTION	BIN	CLASS	TYPE OF EQUIP.				UNIT		MINIMUM			
DATE	Quantity On Hand	Actual Count	Store Keeper	Foreman	Maint. Supt.	V	S	T		DATE	P. O. No.	Quantity Ordered	List Price

VENDORS

1		4	
2		5	
3		6	

EXHIBIT 3 (FACE).

DATE	REMARKS	INITIAL

EXHIBIT 3 (REVERSE).

the item on hand and inserts this figure in the proper column of the purchase record card, which is forwarded to the maintenance department for approval or disapproval to reorder. If the item is to be reordered, the maintenance department either approves the present minimum quantity to be kept on hand, or lists under "Remarks" any facts that will result in a change of the minimum quantity to be maintained and establishes the new minimum quantity. The purchase record card is then forwarded to the purchasing department, where a purchase order is originated for the necessary quantity as indicated from the information shown on the purchase record card. When an order has been placed, the quantity ordered and purchase order number are noted on the purchase record card and it is returned to the material inventory department. Upon return of the card, the chief material inventory clerk checks to see that the quantity on hand, as shown by the material inventory cards, agrees with the count made by the chief storekeeper and investigates any differences and originates an inventory adjustment entry or makes recommendations for handling the adjustment, depending upon the circumstances.

This system provides for verification of quantities on hand of faster moving items several times during the year and adjustment of inventory records at each verification. In addition, a physical count is made of all materials and supplies as of the close of business each year. This system has functioned with a minimum of effort and has resulted in not only keeping the stocks of obsolete items at a minimum by preventing the reordering of items that will not be used, but also has maintained necessary stocks of all items on hand so that maintenance work is not interrupted by the lack of material and has provided a very effective control of materials for the management.

Special Funds

Under the heading of special funds, Transcontinental & Western Air, Inc., carries its funded insurance reserve for loss due to accidental damage to airplanes in flight. Formerly it was the practice of practically all airlines to insure against this type of loss, but due to the relatively high premiums that are charged for this types of insurance, and as a result of several years experience, the

larger domestic airlines now carry this risk themselves. The insurance reserve is created by monthly charges to expense and a credit to the reserve until the gross amount of the reserve is approximately equal to the cost of the highest priced individual airplane flown by the company. As the reserve is set up a like amount of cash is set aside as an insurance fund. Losses are charged directly to the reserve as they occur and the amount of cash covering the loss is transferred from the insurance fund to general cash. There is considerable lack of uniformity in the industry in handling self-insurance—some companies expressing the theory that no loss has accrued prior to the occurrence of an accident and that the total amount of such loss should be charged to the current month's expense. It is anticipated that when additional experience has been acquired, a uniform system of handling self-insurance will be provided for all companies through the co-operation of the companies and the Civil Aeronautics Board.

Fixed Assets

The Civil Aeronautics Board has provided the following classification of real property and equipment.

Aircraft
Aircraft Engines
Aircraft Communication Equipment
Miscellaneous Flying Equipment
Airway Communication Equipment
Hangar Equipment
Shop Equipment
Motorized Vehicles and Equipment
Fuel Storage and Distribution Equipment
Furniture, Fixtures and Office Equipment
Airport and Airway Lighting Equipment
Miscellaneous Ground Equipment
Buildings and Other Improvement on Land Owned
Buildings and Other Improvements on Land Not Owned
Improvements to Buildings Not Owned
Land

Aircraft accounts and their related depreciation reserves are subdivided to indicate the cost of each type of plane without engines, propellers, automatic pilots, deicers, radio equipment, etc., and the cost of exchangeable spare instruments, etc., on hand for use in planes. Aircraft engines, both in use on planes and spare engines and spare exchangeable accessories such as carburetors, magnetos, etc., and their depreciation reserves are similarly sub-

divided by types. Similar subdivisions are also made for aircraft radio equipment, both items in use and spare equipment, and for other items of flying and ground equipment.

Individual records are maintained for each airplane, engine, propeller blade, propeller hub and each other item of equipment, such records indicating the cost of acquisition and total depreciation reserve to date. Airplane and engine records also indicate total hours in service to date.

It may be of interest to those outside of the air transportation industry to know that Douglas DC-3 airplanes used on practically all major airlines in the United States, cost—including engines and all accessories—from $120,000 to $130,000, depending on whether they are equipped as day or sleeper planes. In addition, one spare engine, costing approximately $10,000, must be maintained for each airplane in addition to spare propellers and other equipment.

Transcontinental & Western Air, Inc., also operates a fleet of five Stratoliners which cost approximately $375,000 each. These are four-engine planes and since the engines are not interchangeable with Douglas equipment, four spare engines must be maintained for each Stratoliner.

Airplane depreciation rates were originally based on a useful life of three years. This period has gradually been extended until today depreciation rates are established on an estimated life of four or five years, with residual values up to 10 per cent of the original cost.

Airplane engines are now generally being depreciated on a basis of 5,000 hours use or on an estimated life of three to four years, in both instances with residual values up to 5 per cent of cost. Depreciation rates on propellers and other items of flying equipment, including radio equipment, deicers, etc., vary considerably but for the most part are based on a useful life of two to five years, with or without residual values up to 5 per cent of cost. Depreciation rates on ground equipment are for the most part comparable to rates applying to similar equipment used in other industries.

The depreciation rates used for flying equipment may appear high to those outside the industry and it should be emphasized that due to the comparative newness of this industry, sufficient experi-

ence has not been accumulated to establish hard and fast rules with regard to depreciation. Also, no distinction is made between depreciation and obsolescence. Obsolescence is a major factor to be considered in establishing depreciation rates on flying equipment.

Current and Accrued Liabilities

Traffic balances payable to other carriers consists of:

1. Tickets sold for transportation on other airlines by
   (a) Ticket offices operated by the airline
   (b) Travel bureaus and other outside ticket agencies reporting to the airline.
2. Tickets sold by other airlines under the air travel plan, to be charged to an air travel plan account held by the subject airline.

The liability for tickets sold for transportation on other airlines is established at the time the ticket sale is reported. This liability is maintained until the ticket coupon covering the transportation is presented for payment, or until four months have elapsed from the date of sale of the ticket. If the ticket has not been presented for use or refund within this period, the amount of the ticket is credited to revenue and as the ticket is not valid for use after 120 days from date of issue, any subsequent refund that may be made will be charged to revenue. Any commissions that are paid to outside agents for the sale of tickets are deducted from payments made to other airlines for these tickets. Commissions are not charged on sales made by airline operated offices for transportation on other airlines. The liability for sales made by other airlines against an air travel card account is established as soon as the sale is reported by the other airline, and a corresponding charge is immediately made against the account of the air travel card contract holder. Settlements for these items are customarily made between airlines following the close of business each month.

Transportation sold but not used represents the value of tickets outstanding which have not yet been presented for use or refund and on which the 120-days limit for use has not yet expired. Through the use of this account, credits to revenue for any accounting period represent only the amount of transportation actu-

ally used for the period, plus the value of tickets outstanding for more than 120 days and credited to revenue during the period. The practice of issuing tickets with optional routings between certain specified points may result in unused tickets being carried in the transportation sold but not used account which actually are due another airline when a passenger exercises the option of using another routing. Corrections in the accounting distribution of such tickets are made when the tickets are presented for payment by another airline, since the presentation by the other airline will constitute the first notice that the option in routing has been exercised.

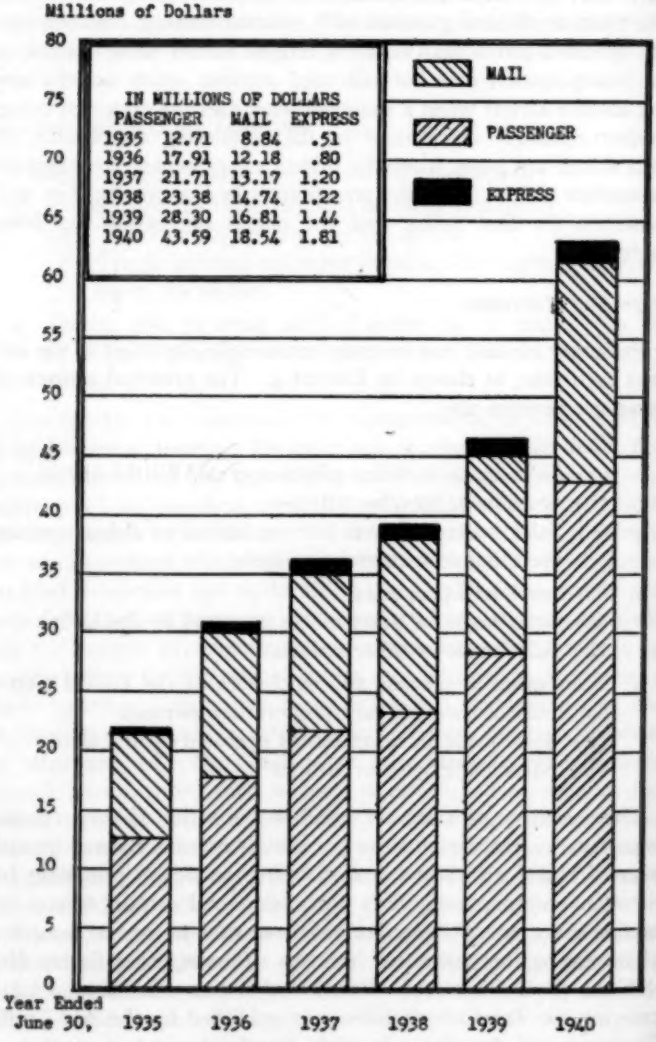
Operating Revenues

Passenger revenue has become increasingly important to the airlines each year, as shown by Exhibit 4. The principal sources of passenger revenue are:

1. Cash sales
   (a) Sales made in ticket offices operated by the airline
   (b) Sales made by other airlines
   (c) Sales made by travel bureaus and other ticket agencies operating on a commission basis
2. Air travel card plan sales
   (a) Sales made in ticket offices operated by the airline
   (b) Sales made by other airlines
3. Sales made to officials and employees of the United States Government traveling on transportation requests
   (a) Sales made in ticket offices operated by the airline
   (b) Sales made by other airlines

These sources of sales are listed in the order of their relative importance. A discount of 10 per cent or more is allowed on cash sales of round-trip tickets, and discounts on tickets providing for circuitous routings, children's fares, etc., and certain special excursion rates have been authorized from time to time as a method of increasing the volume of business. Passenger tariffs are filed with the Civil Aeronautics Board, and a consolidated joint tariff covering the fares of all airlines is published by the Air Traffic Conference of America. It might be of interest to note that on

PRINCIPAL SOURCES OF REVENUE
OF DOMESTIC AIR TRANSPORT COMPANIES



From the Second Annual Report of the Civil Aeronautics Authority for 1940, page 39, Appendix H.

EXHIBIT 4.

July 1, 1929, the fare for transportation from New York City to Los Angeles was $338.10 for a combination rail and air trip that required forty-eight hours for completion; whereas today, the fare is only $149.95 and the passenger can leave New York City at 8:15 P.M. and arrive in Los Angeles at 8:53 A.M. the next morning.

As a means of closely following passenger revenue, a daily statement is published in the following form:

DAILY LOAD FACTOR

	This Date	*This Month To-Date*	*Last Month To-Date*	*This Month Last Year*
Plane Mile Performance	100%	100%	99.8%	99.6%
Seat Mile Performance	100%	99.9%	99.6%	99.8%
Plane Miles Scheduled	49,793	451,816	430,587	338,809
Revenue Plane Miles Flown	49,793	451,816	429,726	337,500
Seat Miles Scheduled	896,274	8,132,688	7,793,625	5,759,753
Seat Miles Operated	896,274	8,124,555	7,762,450	5,748,233
Revenue Passenger Miles Flown	658,761	5,232,213	4,354,734	3,006,326
Revenue per Passenger Mile—Estimated	$.0504	$.0504	$.0505	$.051
Estimated Passenger Revenue	$33,200	$263,700	$219,900	$153,300
AVERAGE				
Seats Available Per Revenue Plane Mile	18	18	18.1	17
Passengers Per Revenue Plane Mile	13.2	11.6	10.2	8.9
Passenger Revenue Per Plane Mile	$.667	$.584	$.512	$.454
Load Factor (Per Cent of Seat miles occupied to seat miles operated)	73.5%	64.4%	56.1%	52.3%

In addition, a weekly statement is prepared giving these results by each flight. These two statements provide a close control over the effectiveness of the sales effort and further provide a check on the effectiveness of the various schedules. They are compiled from the Daily Operations Report, which indicate the number of passengers carried between stations in addition to the operating statistics. In order to provide further information for the management to use in directing sales effort, arranging schedules and making other decisions that will lead toward the greatest possible expansion of passenger revenue, the following is compiled monthly.

1. Scheduled plane miles.
2. Plane miles operated.

3. Scheduled seat miles (Number of seats available for sale times total number of plane miles scheduled to be flown).
4. Seat miles operated (Total number of seats available for sale times plane miles actually operated).
5. Seat miles occupied (Number of seats occupied times number of miles flown).
6. Number of revenue passengers carried.
7. Average distance traveled per revenue passenger.
8. Income per revenue passenger per mile traveled.
9. Total passenger income by flights operated and passenger income per mile by flights operated.
10. Passengers carried by points of origin and destination.

Accounting for Tickets

In order to account for ticket sales and use, Transcontinental & Western Air, Inc., uses a form, shown in Exhibit 5, which is filled out for each form of ticket for each agency when the tickets are issued. As sales are made from this ticket stock, the local sales offices report their sales to the general accounting office. The date of sale is stamped under the column headed "Tariff Rate" if it is a cash sale at regulation rates. If the ticket is sold under an air travel contract, the date of sale is stamped under the second column marked "ATC Rate." Tickets that are spoiled or sold under any special rate, such as special excursions, have the date they are reported stamped under the third column and a further indication is made to indicate that the ticket was either voided or the special rate that applied. Particular attention is paid when recording sales on this form to see that all ticket numbers are reported in sequence, in order to eliminate any possibility of tickets being sold but not reported.

One form of ticket used by Transcontinental & Western Air, Inc., is shown in Exhibit 6. This form of ticket is a combined passage coupon and passenger manifest, as the passenger's name, destination, flight number and other information are indicated along the bottom edge of the ticket. These tickets are inserted in a visible portable holder used by the air hostess so that the information concerning all passengers on one flight is visible. At the completion of the flight, these tickets are forwarded to the general

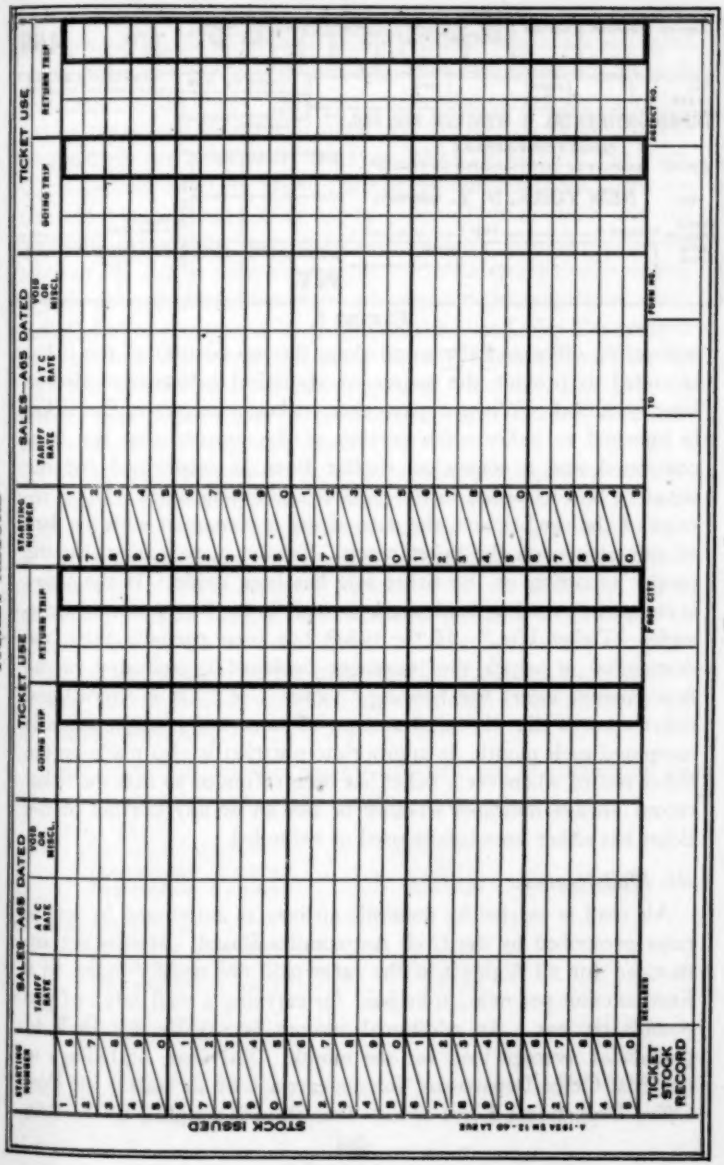

TICKET RECORD
STOCK ISSUED
TICKET STOCK RECORD
STARTING NUMBER
SALES—ACS DATED
TARIFF RATE
ATC RATE
VOID OR MISCL.
TICKET USE
GOING TRIP
RETURN TRIP
TO
FROM
SHEET NO.

EXHIBIT 5.

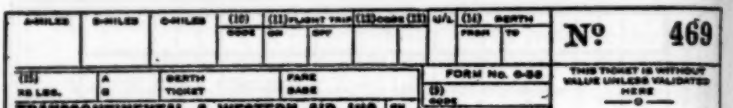

Nº 469
FORM No. 0-88
TRANSCONTINENTAL & WESTERN AIR, INC.
GOOD FOR PASSAGE
FROM AIRPORT OF CITY VALIDATED ON FACE OF THIS TICKET
TO NEW YORK, N. Y. (AIRPORT)
NY

EXHIBIT 6.

accounting office and the space along the top portion of the ticket is coded to provide the source of statistical information that is later compiled. When a passenger makes a stopover, the ticket is punched to indicate the portion of the journey that has been completed and a somewhat similar form is substituted for the ticket to be forwarded to the general accounting office. Upon receipt of the used tickets, the date of use is compared with the date of sale shown on the ticket record, Exhibit 5, to verify that the proper reporting of the ticket sale has been made. If the ticket is completely used, a check mark is made in the heavy ruled column under "Ticket Use." If the ticket has been partially used, the destination at which the passenger deplaned is indicated in the first column under the heading "Ticket Use." It is from these ticket records that the total amount of unearned transportation is computed each month, as appropriate notation is also made on the ticket record whenever a ticket has been refunded so that the ticket record always indicates whether or not all or any portion of the ticket has either been totally used or refunded.

Air Mail Revenue

Air mail is carried by domestic airlines as authorized by and at rates prescribed by the Civil Aeronautics Board. Mail is not authorized for all flights and the rates paid are usually based on a fixed amount per mile, to be paid for carrying a mail cargo of 300 pounds or less. An additional amount is payable for each 25 pounds of average load for the month. The basis of billings to the Post Office Department for the carriage of air mail is the Post Office Department Form 2702. This form is supplied by the Post

Office at the point of origin of each flight, and the total pounds of mail placed upon the airplane at the point of origin are indicated on the form and certified by the Post Office Department. At each stop made by the flight, the pounds of mail removed are receipted for by the Post Office Department and the pounds of mail placed on the flight are certified by the Post Office Department employee. Upon completion of the flight, the original and duplicate forms are retained by the Post Office at the point of destination, and the triplicate copy of the form is forwarded to the general accounting office of the airline for their records. It is necessary to accumulate pounds of mail carried between each stop for each regularly scheduled flight for the month, in order that the Post Office Department may be furnished with the following information: number of trips and miles flown for each regularly scheduled flight for the month, total pound miles of mail carried under each air mail contract route, and average load carried per mile.

Pick up and delivery services, collection for shipments and accounting in connection with air express is handled by the Railway Express Agency, Inc. Each airline receives its proportionate share of the revenue accruing from this source after certain specified expenses of Railway Express Agency, Inc., are deducted. It is customary for the airline to accumulate statistics with regard to pound miles of air express carried. These figures are compiled from the cargo manifest for each flight in much the same manner that air mail figures are compiled from the Post Office Forms 2702.

Operating Expenses

Total operating expenses for the domestic airline companies for the year ending June 30, 1940, were[3]:

Direct Flying		
Operations Expense	$20,796,895	
Maintenance Expense	6,259,493	
Depreciation Expense	4,913,089	$31,969,477
Indirect Flying		
Operations Expense	10,511,158	
Maintenance Expense	3,079,054	
Depreciation Expense	928,358	14,518,569
Traffic and Advertising		7,410,659
General and Administrative		4,680,727
Total Operating Expense		$58,579,432

[3] From Air Transport Association Reports.

Direct flying expenses include all items of expense directly applicable to the operation of airplanes, including aircraft and engine maintenance and depreciation charges for aircraft and engines. The larger items of expense under this heading consist of salaries and expenses of flight personnel, aircraft engine fuels, maintenance expenses and depreciation charges. The first pilot in charge of the plane receives as compensation a monthly salary plus flight pay, which is based upon the number of hours flown as first pilot and the average speed of the airplane flown. This flight pay is computed from the pilot's flight report and from the daily operations reports, and is a by-product of the statistical reports indicating hours flown for each airplane, engine and other items of flying equipment. These records of hours flown for equipment are necessary in order that log books may be kept for each of the above items, which indicate total hours flown to date in order that the necessary maintenance work may be done at the proper time.

The airlines purchase gasoline in tank car or tank wagon lots, depending upon the amount consumed at each station. Detailed records of gasoline consumption are necessary in order to comply with the laws of many of the states and in the case of Transcontinental & Western Air, Inc., these reports are compiled on the gasoline and oil report, Exhibit 1, which has previously been mentioned. Each issue of gasoline or oil is individually recorded on these reports, which are summarized at the end of the month to indicate total gasoline or oil consumption by types of airplanes. For purposes of convenience, average prices for each grade of gasoline or oil are used for the entire system each month.

Aircraft maintenance is a major item as each engine is completely overhauled at the end of 500 to 600 hours use, depending upon the type of engine. In this overhaul, the engine is completely disassembled and rebuilt, replacing all parts that indicate wear past permissible limits. Each airplane also receives a major overhaul at the end of each 4,500 hours' service. Job orders are assigned for each overhaul and records are maintained to indicate the overhaul cost of each of these pieces of equipment. Costs are accumulated only by type of airplane or type of engine on routine maintenance work. It is necessary to maintain daily records on airplanes, engines and some other types of flying equipment indicating the total hours the equipment has been in use since the last overhaul,

in order that such equipment may not be used more than the specified number of hours before the next overhaul operation is performed.

The charge for depreciation, which amounts to approximately 15 per cent of the total direct flying costs, has previously been discussed under the heading of depreciation reserves.

Indirect flying expense includes all executives' and overhead expenses and all ground operations expenses incurred in connection with the operation of the airline. The airlines are large users of commercial telephone and telegraph facilities due to their widespread geographical location and the elaborate reservation system that is required as all seats on airplanes are reserved.

Traffic and advertising expense includes the expense of maintaining sales offices, all advertising expense and the expense of executive officers in charge of the department.

General and administrative expenses include the expenses of the corporation's general officers, their clerks and assistants, including the accounting department, and also legal expenses, general taxes, the expense of conducting hearings before regulatory bodies, and experimental and development expense. The accounting for this group of expenses is similar to that used by other industries for accounting for such expenses.

Reports to Civil Aeronautics Board

The principal accounting report required by the Civil Aeronautics Board is the "Monthly Financial Report and Operating Statistics for Domestic Air Mail Carriers." This report consists of a monthly listing of all accounts in the prescribed uniform system of accounts, grouped by:

1. Balance sheet
2. Consolidated operating statement
3. Analysis of revenues and expenses reported in the consolidated operating statement
4. Schedules giving an analysis of the following accounts:
   (a) Sinking funds
   (b) Other reserve funds
   (c) Operating reserves
   (d) Pension reserves

(e) Sinking funds reserves
(f) Contingency reserves
(g) Other surplus reserves

5. Schedules giving the following information:
   (a) Report of engine hours flown
   (b) Report of plane miles flown
   (c) Consolidated traffic report
   (d) Traffic report of air mail routes
   (e) Report of plane miles flown by owned aircraft
   (f) Report of plane miles flown by rented aircraft
   (g) Aircraft acquired during the month
   (h) Aircraft retired during the month
   (i) Aircraft engines acquired during the month
   (j) Aircraft engines retired during the month

Most of the major air transportation companies operate two or more air mail routes and, in some cases, also operate routes on which air mail is not carried. The Civil Aeronautics Board requires that the analysis of revenues and expenses reported in the consolidated operating statement indicate expenses and revenues of each air mail route and total expenses of non-mail routes. Whenever possible, items of revenues and expenses are allocated directly to the proper route, but it is obvious that many such items are not susceptible to direct allocations and a basis of allocation must be established for these items. Using Transcontinental & Western Air, Inc., as an example, these allocations are made on the following basis:

1. Allocation of revenues and expenses on basis of scheduled operations
   (a) Total miles scheduled
   (b) Total miles scheduled carrying mail
   (c) Total seat miles scheduled
   (d) Total seat miles scheduled carrying mail
   (e) Number of flights scheduled
   (f) Number of flights scheduled carrying mail
2. Allocation of revenues and expenses on basis of performance
   (a) Total revenue miles flown
   (b) Total miles flown

(c) Revenue passenger miles flown
(d) Total passenger miles flown
(e) Total hours flown
(f) Express pound miles flown
(g) Excess baggage pound miles flown

3. Allocation of aircraft crew salaries and other expenses on basis of performance
   (a) Total Captains (First Pilots)—Hours flown
   (b) Total Captains (First Pilots)—Pay hours flown
   (c) Total Captains (First Pilots)—Night pay hours flown
   (d) Total Hostesses—Hours flown
   (e) Total revenue and complimentary passenger miles flown (excluding passenger miles flown by employees on company business)
   (f) Total complimentary passenger miles flown

Generally speaking, indirect expenses, traffic and advertising expense and general and administrative expense is allocated as shown under item 1. Revenues and expenses that vary in direct ratio to total number of miles flown are generally allocated on the basis shown in item 2, while salaries and expenses of aircraft crews and certain other direct flying expenses are allocated on the basis of item 3. In actual practice, all items of expense and revenue are first allocated by locations. Each of these items of expense and revenue are then studied and the allocation to routes made on the basis which past experience has shown is most applicable.

ANNOUNCING

THE TWENTY-THIRD INTERNATIONAL COST CONFERENCE

THE PLACE:

CHICAGO

AT THE PALMER HOUSE

THE DATES:

June 22, 23, 24, 25, 1942

MARK YOUR CALENDARS NOW
AND REMEMBER . . . . . .

"By train or by bus,
By car or by air
When June rolls 'round
They'll all be there"